CLAIMS:

1.   A magnetic resonance method for locating interventional devices, in particular in vivo, in which the interventional device bears a marking which in the magnetic resonance acquisition influences the measured signals or generates its own measured signals, characterized in that the measured signals are processed by means of a one-dimensional
5   signal processing method.

2.   A method as claimed in claim 1, characterized in that the one-dimensional signal processing method is an iterative method.

10   3.   A method as claimed in claim 2, characterized in that the iterative method is based on the maximum entropy method.

4.   A method as claimed in claim 2 or 3, characterized in that, for artefacts occurring in the measured signals, model functions are formed, adapted and subtracted from
15   the measured signals as the iterative method is carried out.

5.   A method as claimed in claim 4, characterized in that the model functions are adapted to the recorded measured signals by way of a scaling parameter.

20   6.   A method as claimed in claim 5, characterized in that the model functions are adapted anew to the recorded measured signals after each iteration step in the iterative method.

7.   A method as claimed in claim 5, characterized in that the model functions are
25   adapted to the recorded measured signals once, before the iterative method is carried out.

8.   A method as claimed in any of claims 4 to 7, characterized in that the measured signals recorded when the marking on the interventional device is inactive are used as model function.

9.   A method as claimed in any of claims 4 to 8, characterized in that rectangular or Gaussian functions are used as model functions.

5   10.   A method as claimed in any of claims 4 to 9, characterized in that the mean value of the difference between measured signal and model function is selected as start value for the iteration.

11.   A method as claimed in any of claims 2 to 9, characterized in that the mean
10   value of the measured signal is selected as start value for the iteration.

12.   A method as claimed in any of claims 1 to 11, characterized in that high and/or low frequency signal fractions are eliminated in order to suppress noise and/or artefacts in the recorded measured signals.
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13.   A method as claimed in claim 1, characterized in that a filter with a finite or infinite impulse response is used as one-dimensional signal processing method.

14.   A method as claimed in claim 13, characterized in that the filter is a Wiener
20   filter or a bandpass filter.

15.   A method as claimed in any of claims 1 to 14, characterized in that during the evaluation of a number of measured signals being used to locate the interventional device, after processing of the measured signals by means of the one-dimensional signal processing
25   method a check as to coincidence of the positions of the interventional device determined by
-- -way of the processed measured signals is carried out. -   -   - -   -   - -   - - - -

16.   A method as claimed in any of claims 1 to 15, characterized in that a number of measured signals being used to locate the interventional device are processed jointly in the
30   one-dimensional signal processing method.

17.   A method as claimed in any of claims 1 to 16, characterized in that the measured signals are recorded in parallel by a number of receiving coils.

18.   A method as claimed in any of claims 1 to 17, characterized in that the one-dimensional signal processing method calculates the correlation of one or more measured signals.

5   19.   An apparatus for locating interventional devices with the aid of magnetic resonance acquisition, in which the interventional device bears a marking which in the magnetic resonance acquisition influences the measured signals or generates its own measured signals, characterized in that the apparatus has program control for carrying out a method as claimed in any of claims 1 to 18.

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20.   A computer program for processing measured signals during the location of interventional devices with the aid of magnetic resonance acquisition, in which the interventional device bears a marking which in the magnetic resonance acquisition influences the measured signals or generates its own measured signals, characterized in that a method as

15   claimed in any of claims 1 to 18 can be carried out by means of the computer program.